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A

SHORT ENQUIRY
INTO THE
MERIT OF SOLVENTS,

So far as may be necessary to compare them
with the

OPERATION OF LITHOTOMY.

BY

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LONDON.

*Hoc opus, hoc studium, parvi properemus et ampli,
Si patriæ volumus, si nobis vivere chari.* Horat. Epist.

L O N D O N:

Printed for J. DODSLEY, Pall-Mall. 1781.

Price 1 s. 6 d.

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T O
Dr. WILLIAM CADOGAN,

FELLOW OF THE ROYAL COLLEGE OF
PHYSICIANS, LONDON,

THE FOLLOWING ENQUIRY

IS HUMBLY INSCRIBED,

AS A PUBLIC ACKNOWLEDGEMENT OF GRATI-


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P R E F A C E.

IT is not intended, in the following enquiry, to enter into a chymical examination of the several remedies, which have been proposed as solvents of the stone in the human bladder; the basis of most of those compositions being generally known.

In the present instance, the author wishes to take a view of the general method of treatment by internal medicines, and its general effects; and, in as concise a manner as may be, to compare the advantages and evils resulting from a reliance on that mode of treatment, with those attending the extraction by manual operation.

Thus a question of no less concern to the lives of patients, than to the honor of surgery is considered.

For if it should appear that we are at this time possessed of a safe and efficacious internal medicine, as a solvent, we certainly are not authorized to persist in the operation of cutting for the stone.

If, on the contrary, it should be evident, that most of the methods of internal treat-

ment have not only wanted efficacy, but have been highly injurious : justice and humanity require us to place no further confidence in them ; nor in that case can we be justly accused either of rashness or cruelty, in asserting, that lithotomy remains, as our last, our only resource.

It may possibly be asked, Why a subject of such importance is treated in so superficial and cursory a manner ? The author can only lament, that his abilities have not kept pace with his wishes, otherwise, this his first effort should not have been submitted to the public in so defective a state.

The common excuse, of meaning this weak attempt as an incitement to some more able hand to take up the subject, might be here made use of ; but expressions of that kind, though they wear the face of humility, carry with them a degree of importance, which, in a Preface to a bare recital of facts, with short comments, would be misplaced, unnecessary, and absurd.

A
SHORT ENQUIRY
INTO THE
MERIT of SOLVENTS, &c.

CHAPTER THE FIRST.

A Prejudice against Surgeons considered.—Introduction.—Lithotomy.—The Opposition it met with, and some Reasons for it spoken of.—The general Theory and Basis of Solvents.—Mrs. Stephens's Preparation mentioned.—An extraordinary Case. — Its Consequence. — A Proneness in Mankind to encourage Error and Imposture.

A PARTIALITY for operations has been, for many ages, a commonly received idea, annexed to the character of a surgeon. — This scandal has been heightened by the force of ridicule, and supported by serious assertion; and that which first originated from resentment against the igno-

rance of pretenders, has been indiscriminately charged on modern professors; who, though surgeons, are not observed to divest themselves of that tenderness and humanity which they ought to possess as men.—The number of dismembered objects occurring in the streets of this metropolis, has been produced in favor of the argument; but if they, who mention this, would be candid enough to consider, that every one of those objects was in a situation, in which, saving of the limb was incompatible with the preservation of life, and determine how they would decide in such circumstances, the objection will be fully refuted. Besides, we ought to consider that London, from the vast concourse of persons of every description to it, is the last refuge of most objects in the whole kingdom, who, from the loss of health or limbs, may be supposed to excite pity and relief.

Among the variety of operations, which from disease and accident become necessary to be performed on the human body, the making a lateral incision into the neck of the bladder *, as it has been improperly called, and

* That the ancients took most of their anatomical descriptions from the dissections of brutes, is clear, and particularly so, when they describe the bladder; which in man really has no neck. Though at present we retain
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and extracting the calculus or stone, has raised at different times no small opposition.

The horrors of patients, who shuddered at the thoughts of a painful operation, naturally inclined them on the side of its opposers, and added weight to their cause: these, assisted by a love of novelty inseparable from the human heart, and attracted by a rich harvest of emolument to adventurers, afforded a temporary triumph to the enemies of lithotomy.

Each armed with a specific, arraigned the folly of patients for submitting to it, and the obstinate cruelty of surgeons for persevering in it.

They proffered comfort, ease, and a radical cure to the afflicted; whilst they alledged, that the operation, independent of its pain and danger, which their interest taught them to aggravate, was at best but a palliative

the name for conveniency, it conveys an idea of its shape so exactly opposite to its natural one, that the part of the bladder, where the urethra enters, is larger than the fundus, and its connection with the urethra may be compared to a spherical body pierced by a cylindrical tube. This error has been zealously embraced, and accurately copied, both in plates and verbal descriptions, in all the editions of books of anatomy; where the compilers paid an implicit confidence to the assertions of others, without being at the pains of dissecting and examining the parts themselves.

cure : as, to make use of their own language, the wretched patient, after being tortured by the bloody *apparatus*, was in a few years, if not months, liable to a return of his disease, and to an equal necessity for a second operation.

Their assertions were received with the most implicit faith, and their medicines swallowed with avidity.

Fear and credulity, two infirmities to which all men in a greater or less degree give way, were in the present case turned to good account, by those who had greater dexterity in the arts of deception, than real necessary knowledge, and who were more dexterous as casuists than as physicians : with them, as with most branches of the medical profession, an artful application to the passions, the prejudices, and even the follies of mankind, is a much easier road to emolument and fame, than the rugged and difficult paths of study, diligence and application, which generally prevent the attainment of that versatility of manners, and that winning deportment, without which so little can be done ; and a son of science might spend many unavailing years in anatomical pursuits, and pore over Hippocrates and Van Swieten in obscurity, while a genius of an illiterate, but more sprightly cast, would make his way to affluence and honors untainted by the dissecting-room, and

his hand unsoiled with the rust of any books, but those of Machiavel, Voltaire, and Chesterfield.

The above truth, and a melancholy one it is, urged me to deviate somewhat from my subject.

Without entering into a fatiguing detail of the several particular remedies, that have been offered to the public as solvents of the human calculus, which would be neither interesting, useful, nor necessary : the whole number may be comprehended under the two titles of alkalies and acids, taken either by the mouth, or injected into the bladder.

The general theory of their action was accounted rational, and thought incontrovertible, by patients, who took them with as flattering hopes, and as earnest a reliance, as a person, to whom poison had been administered, would swallow the most undoubted antidote.

The solvent medicine, as the name of it signified, was supposed to act upon the stone, by dissolving the glutinous matter, which united like a cement, and bound the earthy particles of it together ; as the texture of it was thus destroyed, it would naturally crumble to pieces, and its component parts be discharged from the bladder with no great inconvenience. Besides this, it was also concluded, that the same remedy, which dissolved, would

effectually prevent a re-production of calculous matter.

Calculi that had been extracted from the human bladder, were submitted to the action of the solvent, and this experiment of their effects on concretions *out* of the body, strengthened their theory, and induced the encouragers of the internal method of treatment, to draw a prognostic in favor of their efficacy *in* the body.

But we ought to remember, that it was their business, at all events, that the medicine should act on the stone; and we are justified in supposing, that their effects in this instance, were the consequence of such a degree of strength and causticity, as rendered their admission or retention in the bladder impossible: besides the palpable difference between the vessel they made the experiment in, and the internal coat of the bladder.

This reason is so insuperable against the use of solvent injections, that I see no probability of their being ever made use of with advantage. But, unfortunately for the medicines, as well as mankind, these antidotes for the stone were in many cases found ineffectual, and generally injurious.

Nor is it improbable, that the introduction of alcalies into the human body, in such quantities as they have been generally exhibited,

hibited, should be productive of very distressing, and in many cases of fatal effects.

An extraordinary effort of nature, in the constitution of a patient, under a course of a celebrated solvent, seemed to remove, and indeed, for a time, did remove every doubt of its efficacy. I trust that it will not be thought foreign to the subject, to speak further of this case, as it may serve to teach us a very necessary lesson—to be diffident and guarded in our opinions; and points out to us the mistakes, the best informed of us all are liable to, in tracing causes and their effects, and that too in an instance where there seemed the least probability of being deceived.

A patient was produced by Mrs. Stephens, and it was agreed that he should be a decisive test of the merit of her medicine. A stone was plainly felt, and, by several gentlemen of eminence appointed for the purpose, unanimously allowed to be at that time existing in the bladder.

There medy was administered to the patient; the quantities given, and the time it was persevered in, being left to the disposal of the inventor.

After such a space of time as was supposed to be sufficient for a due exhibition and operation of the medicine, the patient was again produced, and after as judicious and accurate an examination as the circumstance seemed to require,

require, the gentlemen appointed to decide on the fact, gave in a report, which by the world was thought decisive in favor of a medicine, that, as far as could be judged, seemed to promise such permanent benefits to human nature.

They reported, that at the time they searched the patient in question, they had the most unequivocal proofs of a stone in the bladder: that for such a time the medicine had been given, and that on a second careful examination nothing like a stone could be felt.

A liberal gift, worthy a British parliament, was the immediate consequence of this report: the case was generally thought so decisive, that a further trial of it was judged unnecessary: the medicine was made public, and enjoyed the temporary reputation of an undoubted dissolver or breaker-down of the stone in the human bladder.

But death brought truth to light, and neither popularity nor confidence could enable it to survive the patient, whose case gave it so great a sanction; the total loss of its fame, which had been gradually declining, was the consequence of his death.

This happened some years afterwards, and afforded an opportunity for inspecting the body; when nothing of a calculous nature could be discovered in the bladder, but on a further

further search, a stone was discovered in the cavity of the pelvis, surrounded by a quantity of adventitious cellular membrane, and inveloped in a portion of the internal coat of the bladder.

It appeared, that a part of this membranous coat, containing the stone, had been forced by some præternatural irritation into the pelvis, through or between the fibres of the muscular coat, which forms the external covering of the bladder, and is called by anatomists, *Musculus Detrusor Urinæ*; the alteration which took place, was very similar to what happens in the ventral hernia, where the *peritonæum*, the internal membrane which lines the *abdomen*, is protruded, with its contents, between the fibres of the abdominal muscles.

In the present remarkable instance, the muscular fibres contracting, and co-operating with the weight of the stone, which could not fail dragging down the *sac*, effectually prevented a return of the protruded parts.

The world is generally rash and precipitate either to condemn or applaud, and the warmest advocate for this medicine could not pretend to attribute so extraordinary an effort in the body to any specific power it possessed.

Abundans cautela non nocet, is a safe but unfashionable doctrine: had it been adhered to in this case, perhaps no resolution would have taken place, until the body of the patient

tient had been examined after death, and the public money would have been saved.

The report the gentlemen made was couched with all necessary caution, and though it amounted to nothing more than a bare recital of facts, it answered for a time every purpose of a decision in favor of the preparation.

When we consider this case, we may account for the immediate cessation of bad symptoms which is said to have taken place; and we can as readily believe, that an instrument introduced into the bladder for the purpose of searching, could not come in contact with the stone.

But it must be a matter of surprize, that a medicine, which in the instance above recited was proved not to have produced any solvent effects, should have obtained, or have been able to support any degree of credit from the time of its publication, and previous to it, until the death of the patient.

The erroneous opinion of the efficacy of this preparation, was most likely assisted by several complaints having symptoms very similar to those attending the stone in the bladder; and in many of these, nature, by time and accident, without the assistance of much medicine, will often cure herself: so that we cannot doubt, but they had in this case, as in many others, the credit of dissolving the stone,
merely

merely from the circumstance of there never having been one in the bladder.

Nor is it improbable, that persons perfectly free from the stone, have been reported to die in consequence of it, when the mode of internal treatment was actually the cause of their deaths; and this supposition will appear still better founded, when we come to speak of the nature and tendency of some remedies that have been made use of.

Among the complaints, whose symptoms are not unfrequently similar to those of the stone, such may be reckoned as proceed from a defect or superfluity in the quantity or quality of the urine; — an undue retention of it, from a variety of causes; — and many temporary affections of the bladder, kidneys, and their appendages, not unfrequently arising from plethora, debility, excess, and local injury.

And on this ground, candour would incline us to assent to the truth of many miraculous cures, related from the most respectable authorities, which, taken in any other point of view, would be contradictory to theory, practice, and common sense.

It is necessary to mention another circumstance, which often confirms patients in the opinion, that several of the disorders I have just spoken of, arise from there being a stone in the bladder; which is, their observing a
gritty

gritty matter at the bottom of the vessel containing the urine : under this opinion, they often apply for advice and medicines to those who may honestly be of the same opinion, or whose interest may induce them to recommend a course of solvents.

What they observe, is nothing more than the selenite assuming the colour of the urine in which it has formed ; and such a chrysalization will frequently be found in the urine of the most healthy.

What greatly assists this error is, that the urine is generally examined at many hours distance from the time of its being received into the vessel : now gravel, or any calculous matter, by its specific gravity descends to the bottom of the vessel, and may very easily be discovered soon after the urine has been voided ; the contrary to this is the fact respecting the selenite, which requires to be out of the body, and at rest, for a considerable time before its formation takes place ; and if this circumstance should not have been taken notice of until solvents have been given, it will not fail being imputed to their efficacy.

As another reason for this remedy having kept up its name, I can only add a fatal disposition in mankind, to adopt and embrace error and prejudice, rather than truth and plain facts, because the latter often carry unwelcome tidings to the human heart.

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The ease with which mankind are duped, is evident enough, were it not proved to a demonstration, by the fraternity of impostors and upstarts in every profession, science, and business, who insult the understanding of the age, and excite at once both anger and contempt.

Had the author, who some centuries since exclaimed, with so much truth and justice,

Mundus vult decipi; et decipiatur:

Had he lived in the present time, when ignorance, effrontery, and impudence, at once draw their support from, and impose on the public, without sense or probability to assist their cheats, he certainly would have added energy to the expression, have adopted a language more severe, and reprobated, with the keenest satire, the insolence of the spurious fantastical tribe.

CHAPTER THE SECOND.

Some Causes that hurt Lithotomy considered.—Delay.—Long Courses of Solvents.—A Case.—Mr. Garrick mentioned.—A few Reasons against the Efficacy of Preparations supposed to act on the Stone.—Prejudice and false Reasoning have been opposed to the Operation.—The Term Anceps misapplied.

I Have endeavoured to shew, that surgeons have not that predilection for operations, so generally charged on them; as they were ready to forward the success of a preparation, which it was supposed would render lithotomy unnecessary.

It has likewise appeared, that this remedy did not dissolve the stone; which renders it more than probable, that all medicines on the same principle will be equally ineffectual.

I shall next venture to speak of some of the causes, which have co-operated in rendering lithotomy less successful than it would otherwise have been; some of them being equally applicable to any other disease requiring manual operation, does not appear to me any just objection to my mentioning them in this place.

They

They may be considered in the following order ; and in treating of them, I shall be led to speak further of solvents, and some of their general effects.

First—Procrastination.

Secondly—Long continued courses of lixivial and other remedies, intended as solvents.

Thirdly—The contaminated air of hospitals ; most of the patients offering for this operation, being objects for hospitals.

Fourthly — An inattention to a few particulars previous to, and during, the operation.

And first, we cannot but lament the frequency and fatality of delay, which probably induced Frere Jacques to exclaim in his religious zeal for the operation, that if, as its opposers asserted, lithotomy had killed thousands, putting off the operation until the patient's strength and constitution were exhausted, had killed tens of thousands.

Nor ought we to be surprized, that patients are willing to have the operation delayed, when we consider how inherent a principle it is in the human breast to fly from pain. The expediency of suffering a present increase of it, for the sake of future relief, a reason though the most clear and convincing, is what their minds, blinded by the terrors of the knife, either cannot or will not comprehend.

Like the drowning wretch catching at a twig, they eagerly grasp every shadow of
C hope,

hope, to save them from the impending evil; thus are they fatally deluded and prevented from obtaining substantial relief.

Nor has it unfrequently happened, that persons have been produced, whose situations rendered them fitter objects for the grave than the table of the operator.

In such cases, surgeons generally have mentioned the impossibility of success, and have prudently declined the operation.

Yet, strange as it may appear, persons at other times inimical to it, have not been wanting to enforce and encourage the performance of it at this period, and under circumstances that promised so fatal an event.

The only motive for so contradictory and so criminal a conduct, must be a hope, that from the ill success which would attend it, and be laid to its charge, they should add weight to their arguments against the operation, and that the death of the patient, hastened, perhaps brought on by their specifics, would be imputed to the fatality of cutting for the stone, and save the credit of their medicine. I need not point out the folly and cruelty of such a conduct, nor the character of such men; they must be void of every principle of honesty and humanity.

With respect to delay, in cases of the stone, we may reasonably conclude, that a morbid irritability of the patient's system, a train of complaints of the nervous kind, and an injury

of the functions of the parts affected, may be produced by an extraneous body, irritating the bladder to frequent præternatural contractions ; — and these cannot fail being aggravated by the distress of mind, inseparable from a disease, peculiarly excruciating, and the constant dread of an operation.

It must be allowed, that instances have occurred, where it was probable, and almost certain, that a stone must have existed and been forming in the bladder for some time before any disagreeable symptoms came on. A case of this kind happened at an hospital of this metropolis very lately.

The patient had enjoyed a state of perfect health until within a fortnight of the operation ; when the usual symptoms of a stone in the bladder coming on and increasing to a violent degree, after being searched, he was cut, and a stone of some size was extracted.

Others have been afflicted with severe attacks for a long period, and their complaints, without any medicine being taken, or any visible cause, have left them for a considerable time, and have afterwards returned in as unaccountable a manner ; but a few exceptions can never cancel a general rule.

In the year 1777 I assisted in opening the body of a gentleman aged about thirty ; whose general health and looks were so impaired, and his body so emaciated, that the gentleman

concerned with me, thought him at least fifty years old.

As I received an account of this unhappy man's case from one of his relations, having never seen him during his life, I hope I shall be excused on that account, for the imperfect manner I relate it in.

His fits of the stone, as they are generally called, were frequent and dreadful; a convulsion of the whole frame seemed on these occasions to take place, accompanied with a discharge of the contents of the stomach and the rectum. — The knees were forcibly drawn up to the abdomen, from whence every effort to remove them, as long as the paroxysm continued, was ineffectual; as that went off he gradually recovered himself, a cold sweat hung in large drops on the surface of his body, and a faintness remained, under which his attendants supported him with great difficulty: at length death closed the wretched scene, and the harrassed patient, after a fit, which seemed longer and more violent than usual, expired in a kind of syncope.

I was given to understand, that he had laboured under this complaint for more than two years and an half; that at first he was treated by an apothecary with oily, and probably diuretic mixtures, with opiates at intervals; and lastly, Castile soap, which he took in considerable quantities.

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The ease and relief that he received, were of course but temporary, the symptoms gradually increased, and he had recourse to some solvent that is vended. In this, and in others of the same kind, he persevered for a considerable time ; a loss of appetite and digestion were added to his other complaints ; and a bottle of some preparation was brought to me, which from its taste and appearance seemed of the lixivial kind ; of this I was told he had taken within three weeks of his death.

On inspecting the kidneys, great part of their substance was degenerated into hydatids, the ureters were enlarged, and their oblique perforation, or valvular manner of entering the bladder, was destroyed.

The coats of the bladder were amazingly thickened ; or, to use a more technical expression, the muscular coat of it, from its increased action, was *improved*.

A stone was found in it larger than the egg of a hen ; the shape was an oblong flattened oval ; the surface of it was irregular, in some parts smooth, in others rough and bordering on angular points, which accounted for the extraordinary violence of the symptoms.

For the last six months of this person's life, his bladder lost its retentive power, and the urine dropped from him as it was secreted from the kidneys.

An anxiety to preserve the stone, induced my friend to secure it immediately, which prevented our weighing it at the time of opening the body ; and it was either broken or taken from him afterwards, which prevented doing it at all.

The calculus almost filled the cavity of the bladder, which had contracted to such a degree, as to render itself unfit for, and incapable of being a reservoir for the urine ; which accounts for the incontinency coming on.

In this case, I fear, the most sanguine promoter of lithotomy would have trembled for its success, even during any of the last twelve months of the affecting tragedy : two of the causes I have before mentioned, combining to render the success of it hazardous, delay, and a long course of solvents.

In circumstances so alarming, in a situation so truly melancholy, patients own their fatal mistake, and lament a reliance on medicines, ineffectual and injurious ; but, alas ! lament it too late ; for on this occasion, as on several others in life, men are apt to neglect evils that may be remedied, because at first they do not seem of great consequence, until the opportunity for being relieved is irrecoverably lost ; as, after a certain time, we ought to consider, that every day, nay, every hour, that we lose by delay, will rob the operation

ration of a proportionate probability of succeeding.

Besides, it has happened, that the ill success which was owing to a want of attention to the time and circumstances necessary for its being performed with the prospect of a happy event, has been most unreasonably charged on the operation itself; and this may, with the strictest propriety, be applied to most operations in surgery.

Deductions against lithotomy, from such false and inconclusive reasoning, would be a species of argument similar to, and as rational, as the prejudiced aversion which I was lately told a burgomaster's wife in Holland had taken against bleeding.

This lady could not, for a long time, be prevailed on to suffer herself, or any of her family, to lose blood, because she had been deprived of a distant relation, in a putrid fever, who, it was naturally supposed, died in consequence of phlebotomy being imprudently performed. — A pleurisy which raged soon after, put the zealous matron's resolution to the test; and her mistaken prejudice, but for the interposition and remonstrances of her friends, would have cost three of her family their lives.

With respect to lixivial remedies, it appears to me, that if given with caution, and in small doses, they leave the patient pre-

cifely in the fame ftate they found him ; if the quantity is increafed, they produce feverifh heats, and an uneafinefs in the fyftem, diforder the *primæ viæ*, appetite and digestion, increafe the fecretion of urine, and render it perhaps more turbid than it naturally is : and if medicines of this kind are given in large quantities, and are perfevered in, they ultimately tend to deftroy the patient ; nor indeed can preparations of this kind be given, even in fmall dofes, in fome conftitutions, without hazarding the life of the patient, and the credit of the prefcriber.

Befides this, general practice does not authenticate their having performed any actual cures, where the ftone was felt previous to their exhibition ; while reason and experience point out to us the fallacy of trufting entirely to fymptoms, in determining the difference of difeafes ; and daily miftakes evince, how cautious we ought to be, in affording an implicit confidence to the defcriptions and aggravated feelings of patients.

And indeed we ought not to be furprized at its want of fuccefs, when we take a view of the variety of channels and alterations it muft pafs through, and the diluted ftate in which it muft of neceffity pafs into the bladder.

From the ftomach, we are to fuppose it abforbed, and mixed with the chyle conveyed into the blood ; then carried to the kidneys
by

by the emulgent arteries ; it there undergoes a process which we are not acquainted with, compared by some to filtration ; and finally, by the ureters it gets into the bladder to act on the stone.

So that, before it can possibly reach the seat of the disease, the whole mass of blood must become lixivial ; and it would be very unreasonable to suppose, that a preparation, whose activity depended, in a great degree, on its causticity, should become inert and harmless in its passage, through parts so minute, so delicate, and possessed of so great sensibility, as the internal coat of the bladder is more especially endued with, for very obvious purposes : and indeed the irritability of this membrane is such, that no fluid but the natural one can be long contained in it, even pale urine, or urine with matter in it, exciting, in a degree, symptoms of the stone, and forcing the person to void it very quickly.

That delight and wonder of the age, Mr. Garrick, who was as much beloved as his death was universally lamented, laboured for many years under a calculous complaint : partial to medicines, and eager to embrace every thing that possessed or promised any efficacy, he persisted in the use of many solvents ; and a violent pain in the stomach, which latterly was frequent, he generally attributed

tributed to the effects of these medicines, as he had not experienced it until their use.—On inspecting the body after death, the organization and substance of the kidneys were found almost destroyed; a stone of considerable size was found in the bladder; the surface of which plainly evinced, that it had not been in any degree abraded, dissolved, or broken down; though it might have been expected, from the vast quantities of drugs he swallowed, his long perseverance, and the boasted efficacy of them.

Instead of acting as lithontriptics, and destroying the stone, in this melancholy instance, they were generally supposed to have brought on a destruction of the system.—Could Mr. Garrick have been persuaded to submit to the operation before he took the solvents, the world might still have been blessed with his presence, and his friends might not, for many years, have felt the irreparable loss of so entertaining, so instructive, and so amiable a man.

As to solvents,—a long course of them, from their evident effects, cannot be favourable to the operation of lithotomy, the success of which will be proportionably lessened as the general health is impaired.

A languor and debility, with a disposition to feverish complaints, accompanied with a
loss

loss of appetite and digestion, are, in greater or less degrees, consequences, which I have not in the least aggravated.

Under these, and their attendant circumstances, a disease, not in general dangerous, will often become fatal; stone patients being liable to other incidental complaints in common with mankind.

I have seen two instances, where the patients, in a distinct benign species of the small-pox, both died, though the disease in the neighbourhood was by no means fatal: they were taking solvents when the symptoms of the small-pox came on; and though it could not be certainly said, that the solvents were the cause of their death, the natural and impartial inference would render it more than probable.

A third patient, under a course of solvents, was seized with a putrid fever, and ulcers in the throat, under which he sunk, though Port wine, bark, blisters, &c. were liberally used, and under the direction of a gentleman, who is an honor to his profession: this last patient was remarkably healthy before he was afflicted with the stone. — I was not permitted to examine either of these bodies after death, to ascertain whether they really had calculi in their bladders, and how

far

far the solvents had produced any effects; nor can I help lamenting the mischievous obstructions, which this prejudice lays in the way of surgical knowledge.

Scrupulously observed, in times of abject barbarity, or superstitious bigotry, the student in anatomy will find a difficulty to overcome it in times so enlightened in many other respects as the present; nor is it improbable, that in some remote period, posterity may mention it to the disgrace of an age not hood-winked by superstition, but encouraging most branches of useful and polite arts, that the hands of industry and diligence were tied on so interesting a subject, and that so great an avenue to improvement was barred up, as the examination of morbid appearances after death.

Having endeavoured to shew how far internal medicines obstructed the success of lithotomy, and some other causes; I shall proceed in the next chapter to a short consideration of another cause or two; and after some necessary observations, I shall hasten to a conclusion. And I believe, that most stone patients would readily submit to the operation, were they not deluded on the one hand by flattering, but false promises, and terrified on the other by alarming descriptions.

It

It has been tritely observed, *anceps remedium melius quam nullum* ; but remedies, whose curative effects are uncertain, and whose injuries to the constitution are highly probable, cannot, with propriety, be comprehended under the description of this axiom.

CHAPTER THE THIRD.

Hospital Air.—Defects in some Parts of the Operation considered. — Fixed Air mentioned. — Some Objections to Lithotomy spoken of. — Circumstances in favor of Solvents proved not to be so.—Mr. Cheselden's Account.—Conclusion.

I Have mentioned the contaminated air of hospitals as another cause operating against the success of lithotomy. As this is acknowledged and lamented by all, I shall be very explicit in considering it. — So far as it affects the general health of patients, it will tend to this purpose.

But the proper digestion, and healing of the sore, are what seem principally to suffer from it.

And whoever has attended to the patients in the hospitals in this city, after they have been cut for the stone, must have observed many instances, where the sore put on a bad appearance, with a thin gleety discharge for months ; but on the patient's retiring into the country for a few weeks, a kind granulation took place, the sore soon healed, and the patient perfectly recovered.

The

The general fatality of compound fractures in this metropolis, which surgeons of the first eminence complain of, may in a great measure be attributed to this cause : it remains to be decided, how far it would be either expedient or possible, to erect a building in an airy situation, separate from the hospital, and to appropriate it solely to patients of a certain description.

It may be necessary to observe, that when I said, “ most patients, subjects for this operation, were objects for hospitals,” I did not mean to infer, that one rank of men were more liable to the stone than another, as I do not know that it is so ; what I said, arose from this fact, that the comparative number of those, who were able to employ an operating hospital surgeon at their own houses, was very small.

And the advantages of having recourse to the best medical and surgical advice, which the very lowest people in great cities possess, is a privilege, which the useful rank of mankind, between affluence and poverty, cannot, or must not, take the benefit of ; whilst the undiscerning and thankless multitude either demand it with stubborn insolence, or enjoy it with silent ingratitude.

The blessings of ease and comfort should be diffused with a liberal and unreserved hand, to every individual of the creation ; and he who does not feel an ample reward, in having
relieved

relieved a fellow-creature, does not deserve to practise, or even to live.

The last cause I mentioned, was a defect in a part of the operation :—and I speak of it with the awe and timidity of a young mariner, venturing his little bark in dangerous seas, and in the tracts of able and experienced navigators.

The circumstance I meant to speak of, is the external incision ; which every one in the habit of attending to operations, must at times have observed to be small and inadequate to the purpose of admitting the extraction of the stone ; nor has the whole strength and repeated efforts of the operator been able sometimes to effect it ; though *assisted* (as I have been informed) by the arms of an assistant applied round his body.—I have seen two operations performed, where, after several ineffectual trials, the stone could not be extracted until the incision was enlarged. — Nor can I see that any of the dangers, attending an external incision of the common size, will be any ways increased or diminished, by making it half an inch, or even an inch longer or shorter.

The cutting gorget, for which the world is indebted to Sir Cæsar Hawkins, generally makes the oblique internal wound sufficiently large, assisted by the yielding quality of the bladder, to admit the extraction of most stones : the integuments yield but little in proportion, being more rigid and thicker :—
and

and the great injury the parts must receive, from forcing a large body through a small wound, will add the dangers of laceration and contusion to those common to the operation; and daily experience evinces the facility with which inflammation, from external wounds, communicating with cavities, extends, by what physiologists have called, consent of parts, over their internal surfaces.

A notion that quickness is an indispensable qualification in a lithotomist, has been productive of very fatal mischiefs; and an operator must be possessed of a good share of coolness and intrepidity, who would not be affected by thirty or forty watches being taken out, in a theatre, to determine critically the precise time in which the operation was performing: in such situations I have felt for the patient, and in no small degree for the surgeon.

I am told, that a gentleman who brought lithotomy to a great pitch of perfection, generally gave his watch to an assistant, to determine the time with exactness: both the precedent and principle on which it was founded, are dangerous; it may be taken up by men of equal ambition, but less dexterity.

Sat cito si sat bene,

though a less brilliant and less flattering
D doctrine,

doctrine, is certainly a more safe and a more useful one: and being five or ten minutes longer performing the operation, will be thought, by prudent men, a very trifling inconvenience, compared to the danger of pushing the gorget between the bladder and the *rectum*, the not being able to extract the stone, and other alarming accidents; which the enemies to surgery will ever be ready to impute to a criminal weakness in the operator, whom they will accuse of sacrificing his patient, to the vain wish of being thought a quick and dexterous operator.

I need not dwell on the necessity for gentleness in searching; the puerile circumstance of the instrument being heard to resound against the stone, by persons at a distant part of a room, will not warrant us in moving the staff rudely and rapidly in the cavity of the bladder, where there is a possibility of striking it against the internal membrane; which, besides increasing the pain, might be productive of disagreeable consequences.

Fixed air introduced into the system, either in the form of brisk fermented liquors, or collected during its escape, from a mixture of alcalies and acids, has been spoken of as an useful lithontriptic in some cases; its total inefficacy in others, and the want of proof, that a stone really existed where it

was supposed to have been beneficial, prevent any thing being decided in its favor.

Though this mode of treatment has not yet been introduced into general practice, experiments, authenticated by the most respectable of all authorities, demonstrate, that calculi which have been extracted from the human bladder, and submitted, for a due space of time, to the action of liquors strongly impregnated with fixed air, have not suffered the least diminution of size; neither have their surfaces been eroded, or their hardness and texture been at all affected in consequence of such exposure.

It has been objected to lithotomy, that there is no probability or possibility of its preventing the formation of a second calculus in the bladder: but this objection may be applied, with equal propriety, to solvents, which cannot possibly prevent the remote causes of calculous concretion, such as intemperance, a sedentary life, and others which we are as yet unacquainted with.

That patients have been cut at two different times, is true; that this does not frequently happen, is equally so.

The little acquaintance we have with the different causes uniting to form a predisposition to different diseases, opens a wide field for theory and conjecture; and the phenomena of nature are so obscure in most in-

stances, as to afford but little satisfactory ground for a rational enquiry or real knowledge.

The accidental circumstance of some extraneous substance being introduced into the bladder, has, in some cases, been the only cause that could be assigned for a calculus forming; as patients, in this case, were perfectly free from calculous complaints previous to the introduction of the nucleus into the bladder, and after the operation, were free from the stone for the remainder of their lives.

In other instances, an unnatural detention of the urine in the bladder, from whatever cause, has seemed to produce a disposition to calculous concretion.

As it was not proposed to enter into a particular consideration, either of the disease or its treatment, I shall proceed no further on those heads; and as to abstruse reasoning and ingenious theory, I have neither inclination nor ability to pursue them.

The great quantities of ropy matter that have been discharged with the urine of those under a course of solvents, has been considered as an infallible proof of their efficacy; as it was urged, that such great quantities of a thick glutinous discharge, if retained in the bladder, could not fail affording a constant

stant supply of materials for the formation of calculous concretion.

The mucus of the bladder and urinary passages, in a natural healthy state, is but in small quantities.

When any irritating cause, either from disease or local injury, affects these parts, the quantity of this mucus is constantly increased.

These are precisely the effects of solvents, which, as they stimulate the surfaces they pass through, excite, and produce, a proportionate secretion and discharge of this mucus.

This is very analogous to, and is clearly explained by, what takes place from any irritating cause that is applied to the eye; which never fails bringing on an increased secretion, and copious discharge of the lacrymal fluid.

I cannot help mentioning a circumstance, which in my own mind operates strongly in favor of lithotomy; it is that inward serenity and content, easier imagined than described, with which surgeons generally proceed to this operation; owing to a rational conviction, that what they are going to do, will tend to the speedy recovery and perfect health of an afflicted fellow-creature — The contrary to this is very evident, in those cases, and too many such there are, where certain and speedy death must ensue, if something is not done,

and where, even after an operation, the prospect of cure, or even of life, is distant, doubtful, and melancholy. The feelings of humanity, in this case, diffuse a sympathetic gloom over the countenance of the operator:— he beholds, with a visible concern, an unhappy wretch sinking under a disease, and submitting to additional pain, when the advantage resulting from it is uncertain: though he is not prevented from doing strict justice to his patient, he is undoubtedly affected with sensations very different from those which arise in the mind of an experienced lithotomist; who is firmly persuaded, that with care, the extraction of the stone is almost certain; that the degree of danger is ascertained; and from former experience, he thinks himself justified in drawing a favourable presage to future practice.

It will be necessary before I conclude, to endeavour to determine, what is the general success of lithotomy; and on enquiry, it perhaps may prove to be much greater than the timidity of patients, the opinions of the prejudiced, and the assertions of the interested, would lead us to imagine.

To do this with the minutest accuracy is impossible; as a list of operations, and their success, if it did not comprehend a period of many years, and a large circle of practice, would not at all answer the purpose.

No

No regular annual account of this kind is preserved in our hospitals, from the circumstance of the annual succession of house surgeons; who, when they retire from their office, carry with them their own papers and observations.—This culpable defect has been invidiously attributed to a wish to conceal what might injure surgery, from the public eye; under a supposition, that it would be impolitic to expose a long catalogue of operations, various, cruel, and unsuccessful :—the perfection to which modern surgery has been brought, and the ingenuous and candid behaviour of those gentlemen who conduct our hospitals, incline us not to credit the assertion.

That private lists of this kind, which would enable us to form an average account, tolerably accurate, have been preserved by gentlemen who have been at the head of their profession in London for many years; we have little reason to doubt, from their diligence, attention, and fund of knowledge in other professional matters.

What Mr. Cheselden has favoured the world with, of his hospital practice, in cutting for the stone, will afford some very satisfactory materials for judging of its general success under his hands :—nor can I proceed, without paying a tribute of thanks to this gentleman, who rendered such great and essential services

services to surgeons and mankind. — After practising the high operation for the stone for several years, and with various success, he at length relinquished it, in consequence of an accident from an over-distension of the bladder by injection; from the *peritonæum* being cut through or burst; and on account of the general well-founded objection, that the urine lying constantly on the wound, retarded its healing:—but even in this method of operating, which was given up as less successful than the lateral way, at present universally established, he declared (and the world did him the justice to believe him) that he lost but one in seven. — His delicacy in declining to mention the success of his private practice, because he could not sufficiently witness it, is a conduct that has been often commended, and seldom imitated.

The patients he publicly cut for the stone, in St. Thomas's Hospital, were two hundred and thirteen; their different ages, and the number that died, I shall endeavour to arrange.

Number of patients cut.		Years old each.		died.
105	—	10	—	3
62	from	10 to 20	—	4
12	—	20 to 30	—	3
10	—	30 to 40	—	2
10	—	40 to 50	—	2
7	—	50 to 60	—	4
5	—	60 to 70	—	1
2	—	70 to 80	—	1
<hr/>				<hr/>
213				20
<hr/>				<hr/>

The proportion of twenty out of such a number, cannot be thought great or alarming.

Mr. Cheselden observes, that several had the small-pox during their cure, some of whom died.

One of the first hundred and five had a violent whooping cough, which carried him off. In this case, the urgency of the stone symptoms, most likely rendered the operation immediately necessary ; otherwise, waiting until the incidental disease was better, would have been adviseable.

So that from the general opinion of surgeons, from Mr. Cheselden's account, from what has been imparted to me on the best authority, and from what has fallen under my own observation, during my attendance at hospitals ; — we cannot assert with truth, that
more

more than one out of eleven die in consequence of being cut for the stone.

Were we or could we divest the operation of some of its accidental disadvantages, and be careful enough to guard against some of the causes I have before mentioned, candour might allow us to bring the number to one in fourteen; a degree of danger which attends few capital operations in so small a proportion.

As the method of attempting to dissolve the stone in the bladder, by means of injections, has, for several obvious reasons, fallen into general disuse; I have spoken but little of them in particular, because many of the reasons urged against other modes of treatment, were equally cogent against this.

Should a solvent be hereafter offered to the world, it will be necessary, towards forming a proper judgment of its efficacy, to examine all who take it, after death: the effects of the medicine on the *primæ viæ* and general health of the patient, should be strictly attended to; and the number on whom the trial is made, should be considerable.

Should future ages possess a solvent, efficacious, but not destructive to the system, lithotomy may perhaps be superseded: until then, reason and experience point it out as the best and only resource.

And it seems very clear, that the same,
which

which the most reputed solvents have acquired, has been built on errors in judgement, or interested views. For the human calculus seems to be a substance, that can be acted upon only by such preparations, the introduction of which into the body, in any necessary degree of strength, is inconsistent with the delicacy of the parts they must pass through ; hurtful to the general health of the patient, and peculiarly injurious to the functions of the parts affected, and their appendages.

I shall conclude with advising those, who have prudent resolution enough to undergo the operation, to do it in time, before the irritation of the disease itself, or the deleterious use of solvents, have impaired their general health : for in a morbid state of the blood and juices, no wound can heal kindly ; and the operation, however safe and skilfully performed, by such means may be rendered hazardous and frequently fatal.

F I N I S.

